

IN THE DRAWINGS:

Please amend Fig. 1 as shown in red on the attached copy.

IN THE SPECIFICATION:

Please delete the section titled "CROSS-REFERENCE TO RELATED APPLICATIONS" (which begins at page 1, line 6 of specification) and replace it with the following section.

--CROSS-REFERENCE TO RELATED APPLICATIONS

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This application is based upon and claims priority from prior European Patent Application No. 97-830603.3, filed November 14, 1997.--

IN THE CLAIMS:

gmk
Please cancel claims ~~22-24~~ without prejudice.

Please amend claims 1, 7, 11, 12, and 15, and add new claims 25-31 as follows:

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1. (Amended) An in-situ deposition and doping method for a polycrystalline silicon layer of a semiconductor device, said method comprising the steps of:

growing a first intermediate layer of in-situ doped polycrystalline silicon with a first thickness and a first doping level; and

growing a second additional layer of polycrystalline silicon with a second thickness and a second doping level that is lower than the first doping level,

wherein the first thickness is substantially greater than the second thickness so that the average doping level resulting from a summation of the first intermediate layer and the second additional layer is not significantly changed by diffusion of doping atoms from the first intermediate layer to the second additional layer.

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10. (Amended) The in-situ deposition and doping method as defined in claim 1, further comprising the step of:

performing a subsequent thermal treatment to diffuse dopant from the first intermediate layer to the second additional layer,

wherein the average doping level resulting from the summation of the first intermediate layer and the second additional layer is not significantly changed by the thermal treatment.

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11. (Amended) The in-situ deposition and doping method as defined in claim 10, further comprising the step of:

performing a subsequent thermal treatment to diffuse dopant from the first intermediate layer to the second additional layer,

wherein the average doping level resulting from the summation of the first intermediate layer and the second additional layer is not significantly changed by the thermal treatment.

12. (Amended) The in-situ deposition and doping method as defined in claim 10, further comprising the step of:

performing a subsequent re-oxidation treatment to diffuse dopant from the first intermediate layer to the second additional layer,

wherein the average doping level resulting from the summation of the first intermediate layer and the second additional layer is not significantly changed by the re-oxidation treatment.

15. (Amended) An in-situ deposition and doping method for a polycrystalline silicon layer of a semiconductor device, said method comprising the steps of:

growing a first intermediate layer of in-situ doped polycrystalline silicon with a first thickness and a first doping level;

growing a second additional layer of polycrystalline silicon with a second thickness; and

performing a re-oxidation thermal treatment to diffuse dopant from the first intermediate layer to the second additional layer,

wherein the second additional layer is substantially not doped, and

the first thickness is substantially greater than the second thickness so that the average doping level resulting from a summation of the first intermediate layer and the second additional layer is not significantly changed by diffusion of dopant from the first intermediate layer to the second additional layer in the re-oxidation thermal treatment.

Please add new claims 25-31 as follows:

--25. (New) The in-situ deposition and doping method as defined in claim 1, wherein the first thickness is at least about 8 times greater than the second thickness.--

--26. (New) The in-situ deposition and doping method as defined in claim 1, wherein the first thickness is at least about 10 times greater than the second thickness.--

--27. (New) The in-situ deposition and doping method as defined in claim 1, wherein the polycrystalline silicon layer of the semiconductor device consists of only the first intermediate layer and the substantially thinner second additional layer that provides a barrier during a re-oxidation thermal treatment.--

--28. (New) A semiconductor device formed using the in-situ deposition and doping method of claim 1.--

--29. (New) The semiconductor device as defined in claim 28, wherein the second doping level is substantially lower than the first doping level.--

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Cmcd* --30. (New) The semiconductor device as defined in claim 28, wherein the second additional layer is substantially not doped.--

--31. (New) The semiconductor device as defined in claim 28, wherein the first thickness is at least about 8 times greater than the second thickness.--
